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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,969	10/15/2001	Takanori Suzuki	107348-00151	1045

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EXAMINER

SCALTRITO, DONALD V

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,969

Applicant(s)

SUZUKI ET AL.

Examiner

Donald V Scaltrito

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 2 & 6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The dependent Claims 2 & 6 are directed to operational/method limitations whereas the base Claims 1 & 5 are directed to an apparatus. Since Claims 4 & 8 are dependent upon Claims 2 & 6, respectively, they are also objected to.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 & 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Arnold et al. (U.S. Patent No. 6,195,999).

Arnold et al. disclose an electrochemical engine for a vehicle comprises a storage tank containing hydrogen-retention material that reversibly takes-up and stores hydrogen at a hydrogen-storage temperature and releases it upon heating to a release temperature. A fuel cell stack using the released hydrogen produces electricity and heat by-product (note abstract).

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With respect to Claims 1 & 5, Arnold et al. disclose a fuel cell stack, a plurality of hydrogen storage vessels and a heat generator wherein the hydrogen storage vessels comprise materials capable of absorbing hydrogen (see column 2, lines 44-59 of this reference; see also Figures 1 & 3) and the heat generator generates heat through catalytic combustion (column 3, line 63 – column 4, line 8). The heat generator distributes heat and cooling media to the plurality of hydrogen storage vessels until the temperatures are sufficient to release the hydrogen from the hydrogen absorbing materials (column 5, line 37 – column 6, line 10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et al. (U.S. Patent No. 6,195,999), as applied to Claims 1 & 5 above, in view of Snow et al. (U.S. Patent No. 6,589,312).

Arnold et al. disclose all of the limitations as discussed under the 35 U.S.C. 102(e) rejections. Arnold et al. fail to teach or fairly suggest, however, the use of magnesium based hydrogen storage materials.

Snow et al. disclose a novel hydrogen storage, transportation and distribution system wherein nanoparticles are used to broaden the range of economic materials, improve performance across this broader range, and thereby lower costs of hydride and other storage

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systems (note abstract). Snow et al. teach that it is beneficial to use magnesium based materials because magnesium is relatively cheap and abundant and can absorb large quantities of hydrogen for its weight.

With respect to Claims 3 & 7, it would have been obvious to one of ordinary skill in the art at the time the invention as a whole was made to incorporate the magnesium based hydrogen storage materials of Snow et al. into the invention of Arnold et al. because Snow et al. teach that it is beneficial to use magnesium based materials because magnesium is relatively cheap and abundant and can absorb large quantities of hydrogen for its weight.

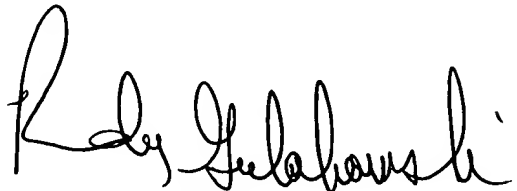
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Scaltrito, whose telephone number is 703.305.4926. The examiner can be reached in his office on Monday-Friday between the hours of 9am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, may be reached at 703.308.4333. The official fax number for the organization where this application or proceeding is assigned is 703.872.9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.0661

Donald Scaltrito
Patent Examiner
Art Unit 1746
August 18, 2003


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700